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# *Solanum pseudodaphnopsis* (Solanaceae), a New Species from the Critically Endangered Restinga Vegetation in Southern Brazil

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**ABSTRACT.** We describe and illustrate a new species of *Solanum* (Solanaceae) from southern Brazil. *Solanum pseudodaphnopsis* belongs to *Solanum* sect. *Geminata* and grows in the restinga, a special sandy coastal vegetation complex, in Paraná and Santa Catarina states. It resembles morphologically *S. cassioides* L. B. Smith & Downs and *S. arenarium* Sendtner, but it can be distinguished from the former by the presence of obovate and leathery leaves and from the latter by its dendritic-echinoid trichomes and narrower leaves.

**RESUMO.** Nós descrevemos e ilustramos uma nova espécie de *Solanum* (Solanaceae) do sul do Brasil. *Solanum pseudodaphnopsis* pertence a *Solanum* sect. *Geminata* e cresce nos solos arenosos da região costeira do Paraná e Santa Catarina. Assemelha-se morfologicamente a *Solanum cassioides* L. B. Smith & Downs e a *S. arenarium* Sendtner, podendo ser distinta da primeira espécie pelas folhas obovadas e coriáceas e da segunda pelos tricomas dendrítico-equinóides e folhas mais estreitas.

**Key words:** Brazil, Solanaceae, *Solanum*.

The genus *Solanum* L. (Solanaceae) comprises about 2000 species, and the taxonomy of the group remains poorly known. The Neotropical region is the richest in *Solanum*, with an estimate of about 850 species (Nee, 1999). Taxonomic treatments of several *Solanum* groups including species from the Brazilian flora have been published by Correll (1962), Roe (1972), Edmonds (1972), Bohs (1994, 1995, 2001), Whalen et al. (1981), and Nee (1991a, 1991b). Although no checklist of the Brazilian flora has been published yet, we anticipate about 320 species, most of these growing in the southeastern and southern regions. A recent revision

mentioned 87 species in southern Brazil (Mentz, 1998).

During our revision of *Solanum* in southern Brazil, we found an undescribed species belonging to *Solanum* sect. *Geminata*. This section is recognized by its geminate and commonly unequal leaves, glabrous or with simple or dendritic trichomes, and by the inflorescence opposite the leaves. *Solanum* sect. *Geminata* was revised by Knapp (1986, 1991, 2002). The new species described herein adds to our knowledge of the section.

***Solanum pseudodaphnopsis*** L. A. Mentz & Stehmann, sp. nov. TYPE: Brazil. Paraná: Paranaguá, Matinhos, 20 Sep. 1946 (fl. fr), G. Hatschbach 382 (holotype, MBM; isotypes, B, PACA, W). Figure 1.

Species *S. cassioides* et *S. arenarium* proxima; a primo foliis obovatis coriaceisque et altero foliis angustioribus et trichomatibus dendriticis-echinoidibus recedit.

Shrubs to 1.7 m high. Branches woody, cylindrical, dark green to almost dark brown, glabrate, apical branches light, tinged in green or gold, covered with dendritic-echinoid trichomes. Leaves solitary, rarely paired, if so then unequal. Petiole 0.3–0.5 cm, with dendritic-echinoid trichomes. Blade coriaceous, shiny, drying olive-green to cinereous, obovate, attenuate at base, obtuse, rounded or slightly acute at apex, margin slightly revolute in dry material, 5–12.5 × 1.5–5.5 cm, adaxial surface glabrous or with a few dendritic-echinoid trichomes on the nerves (young leaves), abaxial surface with evident yellow veins, young leaves presenting sparse dendritic-echinoid trichomes, old leaves entirely glabrous or with a few dendritic-echinoid trichomes at midrib. Inflorescence monochasial cyme, unbranched, rarely branched, opposite the leaves,



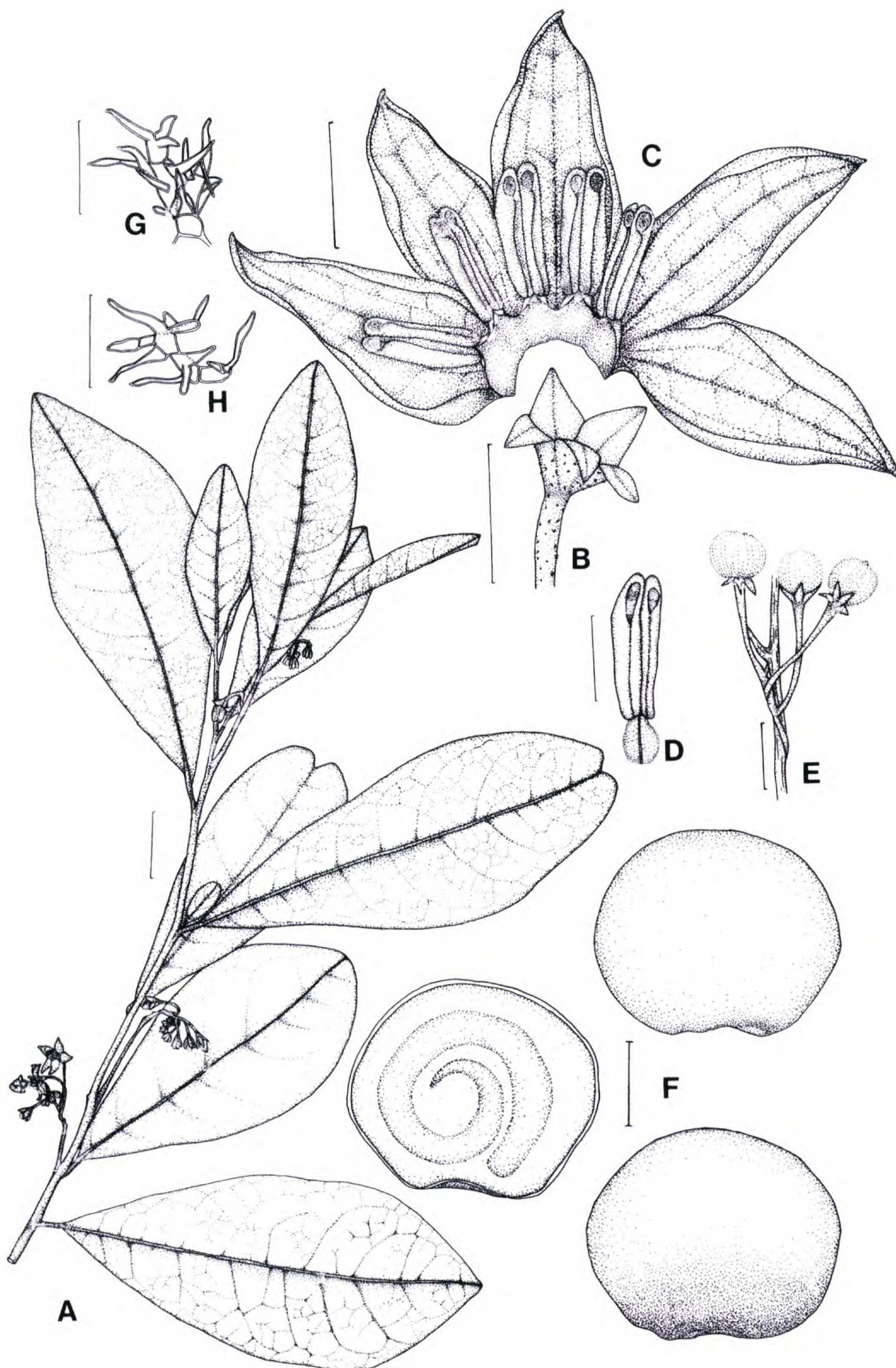


Figure 1. *Solanum pseudodaphnopsis* L. A. Mentz & Stehmann. —A. Habit. —B. Calyx. —C. Corolla. —D. Stamen. —E. Fruit. —F. Seed from both sides and by longitudinal section. —G, H. Dendritic-echinoid trichomes. (A–D, G, H from *Falkenberg & Da-Ré* 5416; E, F from the holotype *Hatschbach* 382). Scale bars A = 2 cm; B, C = 5 mm; D = 2 mm; E = 1 cm; F = 1 mm; G, H = 100  $\mu$ m.



occasionally lateral, 12(to 19)-flowered, flowers arranged on one side only. *Peduncles* to 2.5 cm long, pedicels to 2 cm long, both covered with sparse dendritic-echinoid trichomes; buds elliptic. *Calyx* externally glabrous to scarcely pubescent, internally dendritic-echinoid, ca. 4 mm long, lobes ca. 2 mm long, ovate. *Corolla* rotate, white, externally glabrous, internally glabrescent or with scarce dendritic-echinoid trichomes, deeply 3/4 partite, lobes reflexed after anthesis. *Stamens* 5, anthers oblong, yellow, 2–3 mm long, dehiscence introrse-lateral, splitting to 1/3 of its length, filaments connate at base forming a ring ca. 0.5 mm high. *Ovary* globose, glabrous, style to 7 mm long, exerted beyond anthers, stigma thickened. *Fruit* a berry, globose, glabrous, to 1 cm diam., pedicels to 2.5 cm, distally dilated, ca. 2.5 mm diam., proximally ca. 1 mm diam. near the base. *Seeds* ellipsoid-reniform, about 3 mm long.

*Local names.* Brazil: “canema-mirim, caneminha, canema-do-brejo” (Hatschbach 382).

*Geographic distribution.* *Solanum pseudodaphnopsis* is restricted to the coastal sandy habitats of restinga vegetation in Santa Catarina and Paraná, southern Brazil. It grows in open places, gaps, or borders of coastal rain or swamp forest.

*Phenology.* Flowering specimens have been collected from August to November; fruiting specimens have been collected from September to November.

*Etymology.* The specific epithet is a reference to the shape of the leaves resembling those of species of *Daphnopsis* (Thymelaeaceae), which has obovate and leathery leaves and grows in southern Brazil.

*Solanum pseudodaphnopsis* is recognized by its obovate, glabrous or very sparsely pubescent and leathery leaves, and a pubescence of dendritic-echinoid trichomes. It most closely resembles *S. cassioides* and *S. arenarium*. *Solanum cassioides* differs morphologically by its obovate-lanceolate, to lanceolate or elliptic and membranaceous leaves, glabrous or also with dendritic-echinate trichomes, and by its corymbiform-fasciculate inflorescence. *Solanum arenarium* differs morphologically by its larger and broader leaves and by its dendritic trichomes. These trichomes never have an echinate form. The dendritic trichomes of *S. cassioides* and *S. pseudodaphnopsis* usually show delicate and delicate-curved branches, whereas *S. arenarium* has typically dendritic hairs with branches along the stalk. An illustration of these trichomes was presented by Mentz et al. (2000). The habitat of these species is also different. While *Solanum cassioides*

grows in highlands, over 900 m a.s.l., *S. arenarium* grows in forest spots, mainly on granitic hills, up to 300 m a.s.l., and *S. pseudodaphnopsis* grows in the restinga vegetation, near sea level.

*Solanum pseudodaphnopsis* belongs to *Solanum* sect. *Geminata* sensu Knapp (1986). This section (with different circumscription) was included in *Solanum* sect. *Holophylla* (G. Don) Walpers and treated as a subsectional level by Nee (1999). Because of its ellipsoid-reniform seeds, *S. pseudodaphnopsis* must be included in the *S. arenarium* group. This group has four other species, but only *S. gnaphalocarpon* Vellozo and *S. arenarium* grow in Brazil (Knapp, 2002).

The restinga is characterized as an edaphic vegetational complex that occupies a narrow belt along the Brazilian coast (Rizzini, 1979; Veloso et al., 1991). This taxon was considered (as an ined. name) endangered, rare, or endemic in the shrubby restinga from Santa Catarina state (Falkenberg, 1999). There are other endemic species of Solanaceae growing in the Brazilian restinga. Knapp (1989) described *Solanum restingae* S. Knapp, an endemic species from the coastal vegetation of Bahia, in northeastern Brazil. Barbará and Carvalho (1996) reported the occurrence of 52 species of Solanaceae in the restinga from Rio de Janeiro state, 7 of them considered characteristic of this vegetation: *Brunfelsia latifolia* (Pohl) Benthham, *Cestrum intermedium* Sendtner, *Cyphomandra sycocarpa* (Martius & Sendtner) Sendtner, *Solanum aciculare* Swartz ex Sendtner, *S. curvispinum* Dunal, *S. nemorense* Dunal, and *S. subscandens* Vellozo. Within southern Brazil, at least 5 species of Solanaceae are endemic in the restinga complex: *Calibrachoa heterophylla* (Sendtner) Wijsman, *Petunia littoralis* L. B. Smith & Downs (probably an ecotype of *P. integrifolia* (Hooker) Schinz & Thellung), *Solanum flagellare* Sendtner, *S. pelagicum* Bohs, and *S. reineckii* Briquet (Smith & Downs, 1966; Falkenberg, 1999; Stehmann, 1999; Bohs, 2001). Because of the occurrence of these endemic species from Solanaceae and other groups of plants, as well as the vanishing of the restinga vegetation (Falkenberg, 1999), efforts to preserve undisturbed restinga areas are fundamental to preserving its biodiversity.

*Paratypes.* BRAZIL. **Paraná:** Guaratuba, Rio da Praia, 12 Aug. 1963, G. Hatschbach 10198 (MBM); Paranaguá, Shangri-lá, 22 Sep. 1995, J. Cordeiro 1241 & E. Barbosa (MBM); Barranco, 23 Oct. 1968, G. Hatschbach 20109 (MBM); Rio da Vila, 2 Sep. 1980, G. Hatschbach 43175 (MBM); Praia do Leste, 3 Oct. 1966, J. C. Lindeman & H. Haas 2636 (HBR, MBM); Ilha do Mel, Praia Grande, 28 Mar. 1988, S. M. Silva 1501 & M. R. P. Leite (BHCB, UPCB). **Santa Catarina:** Itapoá, Fazenda Palmital, propriedade de Lúcio Machado, 2 Nov. 1990, D.



Falkenberg & M. Da-Ré 5416 (FLOR); Reserva Volta Velha, Estrada do Pinheiro, 6 Nov. 1992, R. Negrelle & C. Londero A-499 (CRI, UPCB); Penha, Armação, 12 Nov. 1989, J. M. Silva 666 (BM, MBM).

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